

SECTION VII.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF THE MONTH.

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[Dated: Washington, Dec. 3, 1915.]

PRESSURE.

The distribution of the mean atmospheric pressure over the United States and Canada and the prevailing direction of the winds are graphically shown on Chart VII, while the average values for the month at the several stations, with the departures from the normal, are shown in Tables I and III.

The mean pressure for the month as a whole was above the normal over most of the country. The only sections showing negative departures were the upper Mississippi and lower Missouri Valleys, the upper Lake region, and the Canadian Provinces from the Great Lakes to the Rocky Mountains. However, the positive departures, as a rule, were small, the greatest values appearing in the southern Rocky Mountain region. The negative departures were likewise small, except that they were quite pronounced in the Canadian Northwest.

The month opened with abnormally low pressure throughout the southeast, due to the passage of the sub-tropical storm across that region. It was likewise low in the northwest from the Great Lakes to the Pacific. Elsewhere the pressure was near or slightly above the normal.

Rather extensive and well-defined low and high pressure areas followed each other across the country at somewhat frequent intervals during the first half of the month. During the latter part of the second decade the pressure was relatively high throughout most districts, except in the Canadian Provinces it was somewhat below normal.

During the third decade generally low pressure prevailed along the northern border and in the Canadian Provinces, while throughout the central portions of the country, from the Pacific to the Atlantic, it was relatively high. In the south generally the pressure was near or slightly above the normal. The month closed with relatively high pressure throughout the southeastern districts and in the Central Pacific States. Elsewhere it was near the normal, except from the Great Plains region eastward to the upper lakes, and in all Canadian Provinces relatively low pressure obtained.

The distribution of the highs and lows was generally favorable for southerly and southwesterly winds in New England and the northern portions of the Middle Atlantic States, the Lake region, and the great central valleys, northerly and northeasterly in the South Atlantic and Gulf States, northwesterly in the coastal portion of the Middle Atlantic States and the central Missouri Valley. Elsewhere variable winds prevailed.

TEMPERATURE.

Low pressure over the Southeast at the beginning of the month, due to the northeastward movement of the severe tropical storm that reached the Louisiana coast near the close of September, was causing warmer weather in most eastern districts, while an advancing low from the Canadian Northwest was causing southerly winds and warm weather for the season in the districts between

the Rocky Mountains and the Great Lakes. In the far Southwest temperatures were moderately low for the season. During the following few days there were only slight changes in temperature, but by the 5th high pressure had advanced into the Plains region and much colder weather had overspread the districts between the Mississippi River and the Rocky Mountains, with frosts over the central and northern portions. By the morning of the 7th the cool area had moved to the Atlantic coast and decidedly cool weather for the period of the year prevailed in the central valleys, with more or less frost. At the same time another cool area was advancing into the Northwest, and by the morning of the 8th an extensive area of high pressure was central in the lower Missouri Valley and heavy to killing frosts were general in the central valleys. During the following few days this cold area likewise moved to the Atlantic coast and the first killing frosts of the season occurred in the northern portions of the Gulf States and generally to the northward and eastward. As a whole, for the first 10-day period of the month the temperatures averaged below the normal over all portions of the country, except locally in the far West.

With the passage eastward of the above-mentioned cold area warmer weather set in, and during the following 10 days there was a very general tendency to higher temperatures in all districts, and the second decade of the month, as a whole, was warm throughout the entire country, the period being especially warm over the Atlantic coast districts and in the Northwest, where the positive departures ranged from 8° to 11° .

During the last decade of the month, with the exception of short intervals, locally, the temperatures continued high for the season of the year, due to the rapid succession of low-pressure areas moving eastward along the northern border. As a result southerly winds were prevalent over large areas and the average temperatures for the decade equaled or exceeded the normal in all districts, the departures from the normal ranging from $+6^{\circ}$ to $+14^{\circ}$ over much of the central valleys and far western districts.

At the close of the month fair weather and seasonable fall temperatures continued in nearly all portions of the country.

MAXIMUM TEMPERATURES.

During the early portion of the month day temperatures were within a few degrees of the highest of record for October on several dates at points in the Plateau and Pacific Coast States, and on the 6th locally in the Florida Peninsula. Otherwise the maximum temperatures were well within the limits of other years and were generally less than 90° , except at points in the Southeastern States, in central and southern Texas, and at the elevations of Arizona and the interior of California. The highest recorded, 104° , occurred in southwestern Arizona.

MINIMUM TEMPERATURE.

Freezing temperatures were reported during the cold wave, near the end of the first decade, from northern New Mexico northeastward to the Lake region and generally over the Appalachian Mountain region and New England, but during the remainder of the month the night tempera-

tures were generally high for the season of the year, and at the end killing frost had not yet occurred over much of the southern portions of the country. Minimum temperatures of 20° or lower were reported during the early part of the month at points in North Dakota and locally in the northern Rocky Mountain and Plateau regions. Over the Pacific Coast States no freezing temperatures were reported at the lower elevations.

MONTHLY AVERAGES.

Although the monthly means were not as a rule unusually high, the fact that throughout the entire country, save in one or two instances along the immediate Pacific coast, they were everywhere above the normal, is a most unusual condition. Only in rare instances are the temperature conditions for a whole month over the entire country uniformly above or below the normal for the season.

PRECIPITATION.

During the closing days of September a destructive tropical storm passed inland from the Gulf of Mexico, near the mouth of the Mississippi River, and moved thence rapidly northeastward, but with decreasing intensity, during the first few days of October. The storm was accompanied by general and in some cases heavy rains over the districts to the eastward of the Mississippi River.

At the time the tropical storm was passing over eastern districts, unsettled barometric conditions obtained in the Northwest, and on the morning of the 3d a well-defined low area appeared in the central Plains region, which, moving thence northeastward over the Lakes during the following few days, resulted in another period of generally showery weather to the eastward of the Mississippi River.

On the 6th-8th a depression of pronounced formation moved eastward over the northern border States, but without extensive precipitation, and by the 9th the weather had become generally clear under the influence of an extensive area of high pressure that had covered nearly all districts to the eastward of the Rockies. Generally fair weather continued until about the 12th or 13th, when local showers set in throughout the Mississippi Valley, extending eastward to the Atlantic coast districts during the following day or two, and during the last half of the second decade unsettled, showery weather was the rule over much of the country to the eastward of the Rockies, but to the westward fair weather continued.

The last decade of the month was characterized by a remarkable absence of precipitation throughout the country. Despite the fact that a number of well-defined areas of low pressure moved eastward over the northern border States in rapid succession during the decade, practically no rain occurred, except a few local showers in limited areas, and the month closed with clear, pleasant weather prevailing throughout practically the entire country.

The total precipitation for October, 1915, is shown on Chart V. For the month, as a whole, the rainfall was generally heavy in Alabama and Georgia and over the southern portion of the Appalachian Mountains, the greatest amounts appearing in the latter region, where at some points 12 inches or more of rain occurred. These amounts were largely due to the storms at the beginning of the month, referred to elsewhere. The monthly totals were also comparatively large in the upper portion of the Ohio drainage, and they were above the normal in parts of the Plains region, while heavy rains fell on the extreme north Pacific coast. However, with these exceptions the monthly precipitation was quite generally below the normal, the minus departures being especially marked in the central Mississippi Valley, over much of the Lake region

and northeastern States, and generally to the westward of the Rocky Mountains. Except locally in the far Northwest, but little precipitation occurred during the month in the districts to westward of the Rocky Mountains, nearly the whole of the central and southern portions being practically rainless.

GENERAL SUMMARY.

Except for the severe cold during the early part of the month over the northern and central districts, causing much damage in western portions of the corn belt, the month as a whole was favorable for all occupations usual to the season.

In the principal agricultural districts the weather was generally favorable for the gathering of corn, cotton, and other crops, and for the seeding and germination of fall sown grain.

Pastures east of the Rocky Mountains generally continued green throughout the month, affording ample food for stock, which was reported in fine condition to enter the winter. To the westward of the mountains dry weather had so injured the pastures that in some districts feeding was necessary.

In the truck growing districts of the South the weather was generally favorable for most crops.

Average accumulated departures for October, 1915.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
	° F.	° F.	° F.	Ins.	Ins.	Ins.	0-10		P. c.	
New England.....	52.5	+2.1	+11.6	2.72	-0.90	-4.10	5.7	+0.5	81	+2
Middle Atlantic.....	57.8	+2.2	+9.5	2.69	-0.80	-1.50	5.0	+0.2	77	+1
South Atlantic.....	67.4	+3.3	+4.2	3.42	-0.20	-5.00	4.4	+0.4	51	+3
Florida Peninsula.....	78.9	+2.5	-5.7	5.80	-0.50	-4.20	5.2	+0.5	80	+0
East Gulf.....	68.7	+3.1	+4.1	6.18	+3.40	+0.20	4.1	+0.2	79	+6
West Gulf.....	68.8	+2.2	-3.0	2.76	0.00	-3.30	2.3	-1.4	71	-1
Ohio Valley and Tennessee.....	59.6	+2.8	-2.6	2.19	-0.40	-1.80	4.0	-0.4	74	+3
Lower Lakes.....	53.4	+1.6	-1.5	2.53	-0.50	-0.40	5.7	-0.2	78	+2
Upper Lakes.....	49.9	+2.1	+5.9	1.52	-1.30	-1.70	5.9	-0.1	78	0
North Dakota.....	47.6	+5.0	+13.1	1.13	-0.20	-0.80	4.3	-0.9	71	-1
Upper Mississippi Valley.....	55.9	+3.1	+0.2	1.12	-1.30	+5.60	4.2	-0.4	70	-1
Missouri Valley.....	57.1	+4.4	-3.6	1.24	-0.70	+7.80	3.4	-0.7	66	-1
Northern slope.....	49.5	+4.8	+2.7	0.69	+0.20	+2.60	4.6	+0.3	60	0
Middle slope.....	58.0	+2.5	-9.7	1.73	+0.20	+8.00	2.5	-0.9	60	+1
Southern slope.....	63.7	+1.2	-10.2	0.75	-1.20	+2.20	2.2	-2.4	63	0
Southern Plateau.....	61.8	+1.9	-15.3	0.04	-0.50	+1.00	0.8	-1.4	39	-3
Middle Plateau.....	53.2	+2.5	-0.4	0.02	-0.80	-1.20	1.6	-1.5	36	-13
Northern Plateau.....	53.0	+3.6	+16.4	0.47	-0.50	-0.60	5.0	+0.4	49	-14
North Pacific.....	53.0	+1.9	+22.2	4.49	+0.50	-7.0	7.1	+0.8	80	0
Middle Pacific.....	60.6	+1.8	+8.1	0.22	-1.40	+2.80	2.6	-1.8	58	-12
South Pacific.....	64.0	+1.7	+12.5	0.00	-0.80	+2.90	1.9	-1.2	64	-1

Maximum wind velocities, October, 1915.

Stations.	Date.	Velocity.	Direction.	Stations.	Date.	Velocity.	Direction.
		Mis./hr.				Mis./hr.	
Block Island, R. I.	2	54	ne.	North Head, Wash.	31	71	se.
Do.	30	59	nw.	Pierre, S. Dak.	24	51	w.
Buffalo, N. Y.	8	52	w.	Point Reyes Light, Cal.	9	50	nw.
Chayenne, Wyo.	31	58	w.	Do.	10	60	nw.
Duluth, Minn.	7	53	w.	Do.	13	54	nw.
Do.	8	52	nw.	Do.	30	58	nw.
Mount Tamalpais, Cal.	1	60	n.	Do.	31	56	nw.
Do.	2	58	n.	Providence, R. I.	30	52	nw.
Do.	9	60	nw.	Sand Key, Fla.	25	50	se.
Do.	23	56	nw.	Seattle, Wash.	21	58	sw.
Do.	30	54	nw.	Do.	31	51	s.
Nantucket, Mass.	2	60	ne.	Sheridan, Wyo.	24	54	nw.
New York, N. Y.	23	60	nw.	Tatoosh Island, Wash.	20	50	s.
Do.	30	65	nw.	Do.	21	58	s.
North Head, Wash.	13	54	se.	Do.	29	68	s.
Do.	21	66	s.	Do.	27	71	s.
Do.	24	68	se.	Do.	31	61	sw.
Do.	26	60	s.				